REMARKS

Claims 1-28 were previously pending in this application. By this amendment, Applicants cancel claims 4-28 without prejudice or disclaimer, amend claims 1-3, and add new claims 29-39. As a result, claims 1-3 and 29-39 are pending for examination with claim 1 being an independent claim. No new matter has been added.

Amendments to the Specification

The amendment to the Specification corrects a typographical error of a numerical element, as required by the Examiner. Accordingly, the amendment to the specification adds no new matter.

Amendments to the Claims

Independent claim 1 is amended to recite that a communication circuit includes a variable-ratio sample rate filter that changes a sample rate of an input digital data stream, and is connected to an all-digital loop circuit to receive a sample rate control signal. Support for this amendment is found, for example, in original claim 4, in the Specification at page 29, third full paragraph, and in FIG. 17.

Dependent claim 2 is amended to recite that the communication circuit includes a fixed clock coupled to an analog-to-digital converter to substantially fix a sampling rate of the analog-to-digital converter. Support for this amendment is found, for example, in original claim 4, in the Specification at page 29, second full paragraph, and in FIG. 17.

Dependent claim 3, which depends from claim 2, is amended to recite that the variable-ratio sample rate filter includes a digital decimation filter. This amendment preserves consistency with amended claim 2.

New claim 29, which depends from claim 1, recites that the reference signal received by the communication circuit includes a pilot tone signal. Support for this amendment is found, for example, in the Specification at page 29, second full paragraph.

New claim 30, which depends from claim 1, recites that the communication circuit includes a digital-to-analog converter coupled to the variable-ratio sample rate filter, and a fixed clock coupled to the digital-to-analog converter to substantially fix a sampling rate of

the digital-to-analog converter. Support for this amendment is found, for example, in the Specification at page 30, third full paragraph, and FIGS. 17 and 19.

New claim 31, which depends indirectly from claim 1, recites that the variable-ratio sample rate filter includes an interpolation filter. Support for this amendment is found, for example, in the Specification at page 30, third full paragraph.

New claim 32, which depends indirectly from claim 1, recites that the interpolation filter includes an ADSL interpolation filter. Support for this amendment is found, for example, in the Specification at page 30, third full paragraph.

New claim 33, which depends indirectly from claim 1, recites that the interpolation filter includes a POTS interpolation filter. Support for this amendment is found, for example, in the Specification at page 32, third full paragraph, and FIG. 19.

New claim 34, which depends indirectly from claim 1, recites that the decimation filter includes an ADSL decimation filter. Support for this amendment is found, for example, in the Specification at page 30, third full paragraph.

New claim 35, which depends indirectly from claim 1, recites that the decimation filter includes a POTS decimation filter. Support for this amendment is found, for example, in the Specification at page 32, third full paragraph, and FIG. 19.

New claim 36, which depends indirectly from claim 1, recites that the communication circuit includes a second variable-ratio sample rate filter, and a digital-to-analog converter coupled to both the second variable-ratio sample rate filter and the fixed clock to substantially fix a sampling rate of the digital-to-analog converter. Support for this amendment is found, for example, in the Specification at page 30, second and third full paragraphs, and FIGS. 17 and 19.

New claim 37, which depends indirectly from claim 1, recites that the variable-ratio sample rate filter includes a decimation filter, and the second variable-ratio sample rate filter includes an interpolation filter. Support for this amendment is found, for example, in the Specification at page 30, third full paragraph.

New claim 38, which depends indirectly from claim 1, recites that the decimation filter includes an ADSL decimation filter and the interpolation filter includes an ADSL interpolation. Support for this amendment is found, for example, in the Specification at page 30, third full paragraph, and FIG. 19.

New claim 39, which depends indirectly from claim 1, recites that the decimation filter includes a POTS decimation filter and the interpolation filter includes a POTS interpolation filter. Support for this amendment is found, for example, in the Specification at page 32, third full paragraph, and FIG. 19.

Accordingly, the amendments to the claims, and the new claims, add no new matter.

Objection to the Specification

The Examiner objected to the numerical element "312" on page 16, line 23 of the Specification. The element "312" has been amended to read "308", as required by the Examiner. Accordingly, Applicants respectfully request reconsideration and withdrawal of the objection to the Specification.

Objection to Claims 20 and 21

The Examiner objected to claims 20 and 21 under 35 U.S.C. §112, second paragraph. By this amendment, Applicants cancel claims 20 and 21.

Objection to Claims 1-25 Under 35 U.S.C. §112, second paragraph

The Examiner objected to claims 1-25 under 35 U.S.C. §112, second paragraph, as allegedly including single means. By this amendment, Applicants cancel claims 4-25. Claims 1-3, as amended, each include at least two elements, which also are not means-type elements. Accordingly, Applicants respectfully request reconsideration and withdrawal of the objection to claims 1-3, as amended.

Rejection of Claims 1-18 and 26-28 Under 35 U.S.C. §102

The Examiner rejected claims 1-18 and 26-28 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,625,359 to Wilson et al. ("Wilson"). By this amendment, Applicants cancel claims 4-18 and 26-28. Applicants respectfully submit that Wilson does

not anticipate claims 1-3, as amended, because Wilson does not teach or suggest all of the limitations of independent claim 1. This conclusion is supported by the following reasons.

Wilson does not teach or suggest a communication circuit that includes a loop circuit configured to output a sample rate control signal, and a variable-ratio sample rate filter connected to the loop circuit to receive the sample rate control signal to change a sample rate of a digital data stream received by the variable-ratio sample rate filter, as recited by independent claim 1, as amended.

In contrast to claim 1, Wilson discloses methods and apparatus for analog-to-digital conversion with non-uniform sampling of an analog signal. See, e.g., Wilson column 2, lines 48-50; and see Wilson, column 2, lines 28-31 (stating that "[a] limitation of conventional ADCs...is that they determine the magnitude of the analog input signal only at equally paced temporal intervals") (emphasis added); see, also, Wilson, column 2, lines 57-61 (describing how "[a]n ADC sample rate control circuit, also coupled to the ADC, receives a frequency select signal representing the preselected output sample rate, and produces a noise-shaped clock signal for controlling operation of the ADC at the oversampling rate.") Thus, while Wilson is directed to variable sample rate control of an analog-to-digital converter that processes an analog signal, claim 1 recites, in part, a variable-ratio sample rate filter that varies the sample rate of the output digital data stream relative to the sample rate of the input digital data stream.

For all the above reasons, Wilson does not teach or suggest a loop circuit configured to output a sample rate control signal to be a function of a frequency of a signal received by the communication circuit, and a variable-ratio sample rate filter connected to the all-digital loop circuit to receive the sample rate control signal to change a sample rate of an input digital data stream received by the variable-ratio sample rate filter, as recited by independent claim 1, as amended. Because Wilson does not teach or suggest the limitations recited by claim 1, Wilson does not teach or suggest claims 2 and 3, which depend directly or indirectly from claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-3 under 35 U.S.C. §102(b).

Rejection of Claim 23 Under 35 U.S.C. §102

The Examiner rejected claim 23 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,621,478 to Demmer. By this amendment, Applicants cancel claim 23.

Rejection of Claims 19-22, 24, and 25 Under 35 U.S.C. §102

The Examiner rejected claims 19-22, 24, and 25 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,163,685 to Dilling et al. By this amendment, Applicants cancel claims 19-22, 24, and 25.

New Claims 29-39

New claims 29-39 depend directly or indirectly from independent claim 1. Because Wilson does not teach or suggest the limitations recited by claim 1, as described above, Wilson does not teach or suggest the limitations recited by any one of claims 29-39. Accordingly, Applicants respectfully request consideration and allowance of dependent claims 29-39 in view of the above remarks.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

A request for an extension of time, and a check for the associated fee, are submitted herewith. If any additional fee is occasioned by this response, and is not covered by the enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,
Richard Schubert et al., Applicant(s)

By: _____

Jamie H. Rose, Reg. No.: 45,054
Wolf, Greenfield & Sacks, P.C.
600 Atlantic Avenue
Boston, Massachusetts 02210-2211
Telephone: (617) 720-3500

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